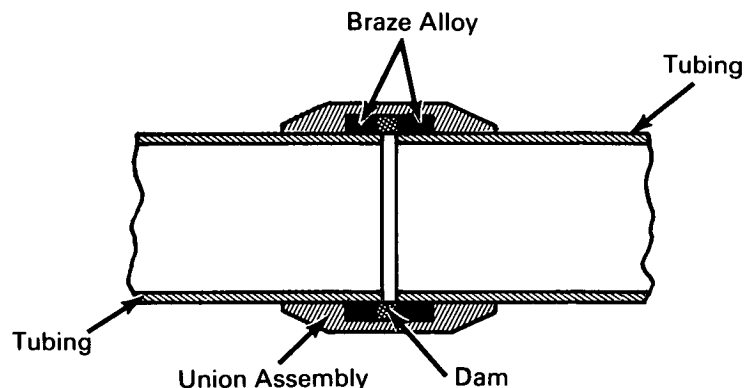


# NASA TECH BRIEF



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## Union Would Facilitate Joining of Tubing, Minimize Braze Contamination



### The problem:

To design a union assembly that would provide a fluidtight connection between two lengths of tubing and minimize introduction of braze contaminants into the tubing.

### The solution:

A union assembly containing two brazing preforms separated by a metal ring that serves as a dam for the molten brazing alloy.

### How it's done:

The ring, which serves as a dam for the brazing alloy, is made of a differentially expansible metal that will provide a fluidtight seal when the union assembly is brazed to the tubing. Predetermined amounts of brazing alloy are cast into the union recesses, leaving the exposed surfaces of the alloy slightly below the surfaces of the union that will mate with the outer peripheries of the tubing.

The ends of the tubing to be joined are slipped into the union assembly until they are centered with respect to the dam. A visual indication of accurate centering would be provided by reference marks on the tubing. Brazing can be effected by induction heating, which would differentially expand the dam and liquefy the braze alloy, causing it to flow towards the ends of the recess in the union and thereby produce a fluidtight joint when the braze alloy solidifies.

### Note:

This design is in the conceptual stage only; as of the date of publication of this Tech Brief neither a model nor a prototype has been constructed.

### Patent status:

No patent action is contemplated by NASA.

Source: Albert E. Terril  
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